REMARKS

Claims 1-3, 5-20, and 24-31 are currently pending. Claims 4 and 21-23 were previously cancelled. Claim 5 is cancelled and claims 1, 7-8, 24, and 27- 30 are amended by the present response.

Objections to the Claims

Claim 7 is objected to as being indefinite on the ground that it includes "the apparatus" without a sufficient antecedent basis. Claim 7 has been amended to address the Examiner's concern.

Section 103(a) Rejections

In light of Applicants' last response, the Examiner presents new grounds for rejection in this office action. Claims 1-3, 5-20, and 24-31 were rejected under 35 U.S.C. §103(a) as being unpatentable over Mullendore et al. (U.S. Public. No. 2003/0185154) in view of new reference Krakirian et al. (U.S. Public. No. 2005/0050211). Applicants respectfully traverse these rejections.

Applicants believe the claims are patentable over the combination of Mullendore and Krakirian. Nonetheless, to facilitate prosecution, the claims have been amended to further clarify the invention. Among other things, claim 1 has been amended to recite "receiv[ing] a command frame with the assigned RX_ID value; and us[ing] the RX_ID value as a handle for accessing information pertaining to the write command session in a sessions table, the sessions table storing information about one or more sessions or exchanges".

Similar amendments have been made to independent claims 24, 27, and 29-30. These amendments are supported throughout the Specification, for example, at paragraph [0015] through [0019]. Applicants reserve the right to further prosecute the claims and any subject matter disclosed in the present application in related applications in the future. Amendments have also been made to claims 7-8, and 28 for editorial reasons and to maintain consistency with the independent claims.

Various embodiments of the present application relate to techniques for improving the speed of data write operations between devices in high speed SAN networks communicating over a slower intermediate network, for example, an IP network. In various embodiments, two switches (one close to a host seeking to write data, and the other close to the target storage device to which the host seeks to write the data) coordinate to accelerate data transfer. The switch near the host sends anticipatory transfer ready commands to the host, and the switch near the target buffers the data sent by the host in response to the anticipatory commands, so that when the target actually sends a transfer ready command, the data in question can be sent to the

target immediately without the delay associated with the high latency intermediate network. (Spec., para. [0010])

The recited exchange identifiers OX_ID and RX_ID are used to keep track of the different sessions involved in the above described accelerated write process. (Spec., para. [0015]-[0017]). The exchange identifiers allow the host and the target to designate an originating party identifier (OX_ID) and a receiving party identifier (RX_ID) to differentiate between different transactions or exchanges (for example, different data write or read operations) between the two devices. (See Specif. [0015]-[0016]).

The Examiner concedes that Mullendore does not teach or suggest the use of exchange identifiers. The Examiner relies on new reference Krakirian to teach this claim element. However, while Krakirian does mention exchange identifiers, it does so in an entirely different context. It does not teach or suggest the use of exchange identifiers in the context of accelerating data transfer.

Krakirian involves the creation of virtual SAN networks. As described in Krakirian, "[0007] To further address this problem and allow administrators to freely add and substitute storage as desired for the particular network environment, there has been a great push to virtualizing the storage subsystem, even on a SAN. In a virtualized environment the hosts will just see very virtual large disks of the appropriate size needed, the size generally being very flexible according to the particular host needs. A virtualization management device allocates the particular needs of each host among a series of storage units attached to the SAN. Elements somewhere in the network would convert the virtual requests from the series into physical requests to the proper storage unit." Krakirian continues: "[0008] While this concept is relatively simple to state, in practice it is relatively difficult to execute in an efficient and low cost manner." Krakirian describes its solution in the following manner: "[0009] The preferred embodiments according to the present invention provide a more complete and viable solution to the virtualization problem by placing the virtualization agents in the switches which comprise the SAN fabric. By placing the virtualization agents in the actual SAN fabric itself, all host and operating system complexities are removed."

Based on the above discussion in Krakirian, and the rest of Krakirian as well, Krakirian's focus is on creating virtualized storage area networks. It does not concern accelerated data transfer; rather it concerns efficiently using as much of the capacity as possible of different storage devices on a storage area network, while at the same time providing easy, transparent use of the storage devices by clients, by virtualizing the storage area network.

By contrast, the claims of the present application involve accelerated write operations and the recited exchange identifiers are used to keep track of various sessions relating to a *write*

command from a host to a target. For example, as noted above, independent claims 1, 24, 27, 29, and 30, as amended, recite using exchange identifiers "as a handle for accessing information pertaining to the write command session in a sessions table, the sessions table storing information about one or more sessions or exchanges".

While Krakirian does describe manipulating exchange identifiers in connection with virtualizing a SAN network, Krakirian does not mention use of exchange identifiers in connection with accelerating data transfer. And Krakarian certainly does not teach or suggest using an OX-ID or RX_ID value assigned by a switch as "a handle for accessing information pertaining to the write command session in a sessions table, the sessions table storing information about one or more sessions or exchanges".

The Examiner may be arguing that the use of exchange identifiers in one SAN context is somehow sufficient to teach or suggest use of exchange identifiers for any purpose in a SAN network. Applicants respectfully disagree. The fact that exchange identifiers may be used for facilitating virtualization of a SAN network, as in Krakirian, does not make obvious their use in accelerating data transfer in the specific manner recited in the claims.

Based on the foregoing, it is submitted that the independent claims, and the claims that depend upon them, are patentable over Mullendore and Krakirian. Thus, Applicants respectfully request that the rejections under 35 USC §103 be withdrawn.

CONCLUSION

In light of the above remarks, the rejections to the independent claims are believed overcome for at least the reasons noted above. Applicants' Representative believes that all pending claims are allowable in their present form. If the Examiner has any questions or concerns, the Examiner is encouraged to contact the Applicants' representative at the number provided below.

Respectfully submitted,
Weaver Austin Villeneuve & Sampson LLP

/Jeffrey K. Weaver/

Jeffrey K. Weaver
Reg. No. 31,314

Weaver Austin Villeneuve & Sampson LLLP
P.O. Box 70250
Oakland, CA 94612-0250
(510) 663-1100